

WHAT IS CLAIMED IS:

1           1. A library terminal comprising:  
2           an article receiving area arranged to receive an  
3 article;  
4           a code reader arranged to read a code on the arti-  
5 cle when placed on the article receiving area; and,  
6           a controller coupled to the code reader, wherein  
7 the controller is arranged to control the code reader so as  
8 to project a visible indicator onto the article receiving  
9 area and so as to change the visible indicator between first  
10 and second visible states, and wherein the controller is ar-  
11 ranged to process a signal from the code reader correspond-  
12 ing to the code read by the code reader.

1           2. The library terminal of claim 1 wherein one of  
2 the first and second states is a blinking state.

1           3. The library terminal of claim 1 wherein one of  
2 the first and second states is a steady state.

1           4. The library terminal of claim 1 wherein one of  
2 the first and second states is an elongated length.

1           5. The library terminal of claim 1 wherein one of  
2 the first and second states is a shortened length.

1           6. The library terminal of claim 1 wherein the  
2 first state is a blinking state having a first rate of  
3 blinking, wherein the second state is a blinking state  
4 having a second rate of blinking, and wherein the first and  
5 second rates of blinking are different.

1           7. The library terminal of claim 1 further com-  
2 prising a proximity sensor arranged to sense proximity of a  
3 user.

1           8. The library terminal of claim 7 wherein the  
2 controller is arranged to control the code reader so as to  
3 project the visible indicator in response to the proximity  
4 sensor.

1           9. The library terminal of claim 7 wherein the  
2 controller is arranged to control the code reader in re-  
3 sponse to the proximity sensor so as to cause the visible  
4 indicator to change to the first state, and wherein the  
5 first state is a blinking state.

1 10. The library terminal of claim 7 wherein the  
2 controller is arranged to control the code reader in re-  
3 sponse to the proximity sensor so as to cause the visible  
4 indicator to change to the first state, and wherein the  
5 first state is a steady state.

1 11. The library terminal of claim 7 wherein the  
2 controller is arranged to control the code reader in re-  
3 sponse to the proximity sensor so as to cause the visible  
4 indicator to change to the first state, and wherein the  
5 first state is an elongated length.

1 12. The library terminal of claim 7 wherein the  
2 controller is arranged to control the code reader in re-  
3 sponse to the proximity sensor so as to cause the visible  
4 indicator to change to the first state, and wherein the  
5 first state is a shortened length.

1 13. The library terminal of claim 7 wherein the  
2 controller is arranged to control the code reader in re-  
3 sponse to the proximity sensor so as to cause the visible  
4 indicator to change from the first state to the second  
5 state, wherein the first state is a blinking state having a  
6 first rate of blinking, wherein the second state is a blink-

7 ing state having a second rate of blinking, and wherein the  
8 first and second rates of blinking are different.

1 14. The library terminal of claim 7 wherein the  
2 controller is arranged to control the code reader in re-  
3 sponse to the proximity sensor so as to change the visible  
4 indicator from the first state to the second state.

1 15. The library terminal of claim 1 wherein the  
2 code reader is arranged to read a code on a circulating  
3 item.

1 16. The library terminal of claim 1 wherein the  
2 code reader is arranged to read a code on an identification  
3 card.

1 17. The library terminal of claim 1 wherein the  
2 article receiving area has an idle indicator thereon read-  
3 able by the code reader in order to determine whether an  
4 article is placed in the article receiving area.

1 18. The library terminal of claim 1 wherein the  
2 controller is arranged to process both loans and returns.

1 19. The library terminal of claim 1 further  
2 comprising a monitor, a data storage memory, and a video  
3 display memory, wherein the data storage memory stores  
4 screen displays, and wherein the controller transfers the  
5 screen displays from the data storage memory to the video  
6 display memory for display on the monitor during interaction  
7 with a borrower.

1 20. The library terminal of claim 1 further  
2 comprising a connector, wherein the connector is arranged to  
3 couple the library terminal over a link to a circulation  
4 system, and wherein the controller is arranged to store loan  
5 transactions during periods when the link to the circulation  
6 system is down so that the loan transactions can be later  
7 transferred to the circulation system.

1 21. The library terminal of claim 1 further  
2 comprising a proximity sensor arranged to sense an article  
3 placed on the article receiving area.

1 22. The library terminal of claim 1 wherein the  
2 visible indicator indicates the correct position of the code  
3 on the article placed on the article receiving area.

1 23. A library terminal comprising:  
2 a display;  
3 a transducer;  
4 a code reader arranged to read a code on an arti-  
5 cle involved in a loan transaction; and,  
6 a controller coupled to the display, the transduc-  
7 er, and the code reader, wherein the controller is arranged  
8 to control the code reader so to as read the code on the  
9 article, wherein the controller is arranged to control the  
10 display so as to lead a user through the loan transaction,  
11 and wherein the controller is arranged to control the trans-  
12 ducer so as to provide an audible feedback having first and  
1 second on-states depending upon operation of the library  
14 terminal by the user.

1 24. The library terminal of claim 23 wherein the  
2 controller is arranged to control the transducer so that the  
3 first on-state indicates proper operation of the library  
4 terminal by the user.

1 25. The library terminal of claim 23 wherein the  
2 controller is arranged to control the transducer so that the  
3 first on-state indicates improper operation of the library  
4 terminal by the user.

1           26. The library terminal of claim 23 wherein the  
2 controller is arranged to control the transducer so that the  
3 first on-state of the audible feedback indicates improper  
4 operation of the library terminal by the user, and wherein  
5 the controller is arranged to control the transducer so that  
6 the second on-state of the audible feedback indicates proper  
7 operation of the library terminal by the user.

1           27. The library terminal of claim 23 wherein the  
2 controller is arranged to control the transducer so that the  
3 first on-state of the audible feedback indicates improper  
4 operation of the library terminal by the user, and wherein  
5 the controller is arranged to control the transducer so that  
6 the second on-state of the audible feedback indicates that  
7 the library terminal needs servicing.

1           28. The library terminal of claim 23 wherein the  
2 controller is arranged to control the transducer so that the  
3 first on-state of the audible feedback indicates proper  
4 operation of the library terminal by the user, and wherein  
5 the controller is arranged to control the transducer so that  
6 the second on-state of the audible feedback indicates that  
7 the library terminal needs servicing.

1 29. The library terminal of claim 23 wherein the  
2 controller is arranged to control the transducer so as to  
3 provide an audible feedback having a third on-state, wherein  
4 the controller is arranged to control the transducer so that  
5 the first on-state of the audible feedback indicates improp-  
6 er operation of the library terminal by the user, wherein  
7 the controller is arranged to control the transducer so that  
8 the second on-state of the audible feedback indicates proper  
9 operation of the library terminal by the user, and wherein  
10 the controller is arranged to control the transducer so that  
11 the third on-state of the audible feedback indicates that  
12 the library terminal needs attention.

1 30. The library terminal of claim 23 wherein the  
2 audible feedback is a first tone for the first on-state and  
3 a second tone for the second on-state.

1 31. The library terminal of claim 23 wherein the  
2 controller is arranged to control the display so as to  
3 provide a visible feedback of the operation of the library  
4 terminal by the user.



1 32. The library terminal of claim 23 further  
2 comprising an article receiving area arranged to receive the  
3 article, wherein the article receiving area has an idle  
4 indicator thereon readable by the code reader in order to  
5 determine whether an article is placed in the article re-  
6 ceiving area.

1 33. The library terminal of claim 23 wherein the  
2 controller is arranged to process both loans and returns.

1 34. The library terminal of claim 23 wherein the  
2 library terminal is a self-service library terminal config-  
3 ured for use by a borrower in order conduct self-service  
4 loan transactions.

1 35. The library terminal of claim 23 further  
2 comprising a connector, wherein the connector is arranged to  
3 couple the library terminal over a link to a circulation  
4 system, and wherein the controller is arranged to store loan  
5 transactions during periods when the link to the circulation  
6 system is down so that the loan transactions can be later  
7 transferred to the circulation system.

1 36. The library terminal of claim 23 further  
2 comprising an article receiving area, wherein the controller  
3 is arranged to control the code reader so as to project a  
4 visible indicator onto the article receiving area and so as  
5 to change the visible indicator between first and second  
6 visible states.

1 37. A self-service library terminal comprising:  
2 an article receiving area arranged to receive an  
3 article;

4 a code reader arranged to read a code on the arti-  
5 cle when the article is placed on the article receiving  
6 area; and,

7 a controller coupled to the code reader, wherein  
8 the controller is arranged to process signals from the code  
9 reader and to provide an explicit feedback to a borrower  
10 when an article has an improper position on the article  
11 receiving area.

1 38. The self-service library terminal of claim 37  
2 wherein the article receiving area has an idle indicator,  
3 and wherein the controller is arranged to process a signal  
4 from the code reader corresponding to the idle indicator in  
5 order to provide the explicit feedback as to whether an  
6 article is placed in the article receiving area.

1 39. The self-service library terminal of claim 37  
2 further comprising a security marker reader arranged to read  
3 a security marker attached to a circulating item, wherein  
4 the circulating item has a code thereon readable by the code  
5 reader, and wherein the controller is arranged to process  
6 signals from the code reader and the security marker reader  
7 in order to provide the explicit feedback.

1 40. The self-service library terminal of claim 37  
2 further comprising a security marker reader arranged to read  
3 a security marker attached to a circulating item, wherein  
4 the article receiving area has an idle indicator thereon  
5 readable by the code reader in order to determine whether an  
6 article is placed in the article receiving area, and wherein  
7 the controller is arranged to process signals from the code  
8 reader corresponding to the idle indicator, and from the

9 security marker reader corresponding to the security marker,  
10 in order to provide the explicit feedback.

1 41. The self-service library terminal of claim 37  
2 wherein the article receiving area has an idle indicator  
3 thereon readable by the code reader in order to determine  
4 whether an article is placed in the article receiving area.

1 42. The self-service library terminal of claim 41  
2 wherein the idle indicator is a code.

1 43. The self-service library terminal of claim 37  
2 wherein the controller is arranged to process both loans and  
3 returns.

1 44. The self-service library terminal of claim 37  
2 further comprising a display, a data storage memory, and a  
3 display memory, wherein the data storage memory stores  
4 screen displays, and wherein the controller transfers the  
5 screen displays from the data storage memory to the display  
6 memory for display during interaction with a borrower.

1 45. The self-service library terminal of claim 37  
2 further comprising a connector, wherein the connector is  
3 arranged to couple the self-service library terminal over a  
4 link to a circulation system, and wherein the controller is  
5 arranged to store loan transactions during periods when the  
6 link to the circulation system is down so that the loan  
7 transactions can be later transferred to the circulation  
8 system.

1 46. The self-service library terminal of claim 37  
2 wherein the article receiving area includes a user card  
3 receiving area having a card idle indicator, and wherein the  
4 controller is arranged to direct a user to correctly posi-  
5 tion a user card on user card receiving area if the control-  
6 ler detects that the card idle indicator is not being read  
7 by the code reader.

1 47. The self-service library terminal of claim 37  
2 wherein the controller determines that a library card is not  
3 correctly placed in the article receiving area when the code  
4 reader reads an article other than the library card before  
5 the code reader reads the library card.

1           48. The self-service library terminal of claim 37  
2 wherein the article receiving area includes a position  
3 sensor, and wherein the controller is responsive to the code  
4 reader and the position sensor in order to provide the  
5 explicit feedback when a circulating item is not in a refer-  
6 ence position.

1           49. The self-service library terminal of claim 48  
2 wherein the controller is arranged to direct a user to  
3 properly position an article when the code reader reads the  
4 code but the controller determines that the article is not  
5 properly positioned against a back wall of the article  
6 receiving area based upon the position sensor.

1           50. The self-service library terminal of claim 37  
2 wherein the article receiving area is a first article re-  
3 ceiving area arranged to receive an article of a first type,  
4 wherein the self-service library terminal further comprises  
5 a second article receiving area arranged to receive an  
6 article of a second type, and wherein the controller is  
7 arranged to direct a user to properly place the article of  
8 the second type at the second article receiving area if the  
9 controller determines that the article of the second type is  
10 improperly placed at the first article receiving area.

1 51. The self-service library terminal of claim 50  
2 wherein the article of the first type has a first type code,  
3 wherein the article of the second type has a second type  
4 code, and wherein the controller is arranged to direct a  
5 user to place the article of the second type at the second  
6 article receiving area if the controller determines that the  
7 code reader reads the second type code when the article of  
8 the second type is at the first article receiving area.

1 52. The self-service library terminal of claim 37  
2 wherein circulating items have first type codes, and wherein  
3 the controller is arranged to direct a user to place one of  
4 the circulating items at the article receiving area if the  
5 code reader reads a second type code from an article at the  
6 article receiving area.

1 53. The self-service library terminal of claim 37  
2 wherein the controller is arranged to notify a user that the  
3 article has been previously processed if the code reader  
4 twice reads the code from the article before the article is  
5 returned by the user.

1 54. The self-service library terminal of claim 37  
2 wherein a circulating item has first and second codes there-  
3 on, and wherein the controller is arranged to direct a user  
4 to place the first code in a reference position where the  
5 first code can be read by the code reader if the controller  
6 determines that a user has placed the second code in the  
7 reference position.

1 55. The self-service library terminal of claim 37  
2 wherein the controller is arranged to provide a notice if a  
3 user is conducting a transaction but the controller detects  
4 no activity for a predetermined amount of time.

1 56. The self-service library terminal of claim 55  
2 wherein the notice directs the clearing of the self-service  
3 library terminal.

1 57. The self-service library terminal of claim 55  
2 wherein the notice requests the user to indicate whether the  
3 user needs more time.



1           58. The self-service library terminal of claim 37  
2 wherein the user has a loan card, and wherein the controller  
3 is arranged to block the user's loan card if the user is  
4 conducting a transaction but the controller detects no  
5 activity for a predetermined amount of time.

1           59. The self-service library terminal of claim 58  
2 wherein the explicit feedback is an indication that the  
3 self-service library terminal must be reset before it can be  
4 used again.

1           60. The self-service library terminal of claim 58  
2 wherein the explicit feedback is an audible tone alert to  
3 indicate that the self-service library terminal needs atten-  
4 tion.

1           61. The self-service library terminal of claim 37  
2 wherein the controller is arranged to detect an error state,  
3 and wherein the controller is arranged to notify a user that  
4 the user may elect to continue a transaction upon detection  
5 of the error state.

1           62. The self-service library terminal of claim 61  
2 further comprising a printer, and wherein the error state is  
3 the printer being out of paper.

1           63. The self-service library terminal of claim 61  
2 further comprising a printer, and wherein the error state is  
3 the printer being out of service.

1           64. The self-service library terminal of claim 61  
2 wherein the error state is a failure of a communication  
3 link.

1           65. The self-service library terminal of claim 37  
2 wherein the controller is arranged to detect an error state,  
3 and wherein the controller is arranged to block the transac-  
4 tion upon detection of the error state.

1           66. The self-service library terminal of claim 65  
2 wherein the error state is the code reader being out of  
3 service.

1 67. The self-service library terminal of claim 65  
2 wherein the error state is a first error state, wherein the  
3 controller is arranged to detect a second error state, and  
4 wherein the controller is arranged to notify a user that the  
5 user may elect to continue a transaction upon detection of  
6 the first error state.

1 68. The self-service library terminal of claim 67  
2 further comprising a printer, and wherein the first error  
3 state is the printer being out of paper.

1 69. The self-service library terminal of claim 67  
2 further comprising a printer, and wherein the first error  
3 state is the printer being out of service.

1 70. The self-service library terminal of claim 67  
2 wherein the first error state is a failure of a communica-  
3 tion link.

1 71. The self-service library terminal of claim 67  
2 wherein the second error state is the code reader being out  
3 of service.

1           72. The self-service library terminal of claim 37  
2 wherein the controller is arranged to control the code  
3 reader so as to project a visible indicator onto the article  
4 receiving area and so as to change the visible indicator  
5 between first and second visible states.

1           73. The self-service library terminal of claim 37  
2 wherein the controller is arranged to direct the borrower to  
3 re-position the article.

1           74. The self-service library terminal of claim 37  
2 further comprising a display device, wherein the controller  
3 is arranged to control the display device in order to lead  
4 the borrower through processing of a loan transaction,  
5 wherein the controller is arranged to detect an error in the  
6 processing of the loan transaction, and wherein the control-  
7 ler is arranged to control the display device in order to  
8 display an action for helping the borrower to correct the  
9 error.

1 75. The self-service library terminal of claim 37  
2 wherein the controller is arranged to direct the borrower to  
3 replace a circulating item involved in a loan transaction if  
4 the borrower removes an identification card from the article  
5 receiving area before placing the circulating item in a  
6 position to be read by the code reader.

1 76. The self-service library terminal of claim 37  
2 wherein, if a loan transaction is rejected with respect to  
3 the borrower, the controller is arranged to inform the  
4 borrower of the reason for the rejection.

1 77. The self-service library terminal of claim 37  
2 wherein, if the borrower positions anything other than an  
3 identification card in a reading position with respect to  
4 the code reader before an identification card is positioned  
5 so that the identification card can be read by the code  
6 reader, the controller is arranged to direct the borrower to  
7 first place the identification card in the reading position  
8 with respect to the code reader.

1           78. The self-service library terminal of claim 37  
2 wherein, if data is incorrectly entered by the borrower, the  
3 controller is arranged to direct the borrower to retry entry  
4 of the data.

1           79. The self-service library terminal of claim 37  
2 wherein, if a circulating item has already been checked out  
3 by the borrower during a current transaction, and if the  
4 borrower attempts to check out the circulating item again,  
5 the controller is arranged to inform the borrower that the  
6 borrower has already checked out the circulating item.

1           80. The self-service library terminal of claim 37  
2 further comprising a video receiver, wherein, if the borrow-  
3 er leaves a circulating item in a position to be read by the  
4 code reader while inserting a video into the video receiver,  
5 the controller is arranged to direct the borrower to remove  
6 the circulating item before inserting the video.

1           81. The self-service library terminal of claim 37  
2 wherein, if the borrower places multiple articles together  
3 in the article receiving area, the controller is arranged to  
4 direct the borrower to place articles one at a time in the  
5 article receiving area.

1           82. The self-service library terminal of claim 37  
2 wherein, if any part of the self-service library terminal is  
3 out of service, the controller is arranged to inform the  
4 borrower as to which part of the self-service library termi-  
5 nal is out of service.

1           83. A method of preparing configuration data for  
2 multiple self-service library terminals and of storing the  
3 configuration data in data storage memories of the multiple  
4 self-service library terminals, wherein the multiple self-  
5 service library terminals are configured by the configura-  
6 tion data to interact with users during loan transactions,  
7 the method comprising the following steps:

8           a) preparing the configuration data on an admin-  
9 istration terminal; and,

10           b) transferring the configuration data from the  
11 administration terminal to the data storage memories of the  
12 multiple self-service library terminals.

1           84. The method of claim 83 wherein at least a  
2 first of the self-service library terminals has a video  
3 display memory, and wherein the method further comprises the  
4 steps of:

5           c) preparing bit maps representing screen dis-  
6 plays;

7           d) storing the bit maps in the data storage  
8 memory of the first self-service library terminal; and,

9           e) transferring the bit maps from the data stor-  
10 age memory of the first self-service library terminal to the  
11 video display memory during interaction with at least one of  
12 the users.

1           85. The method of claim 84 wherein step c) com-  
2 prises the step of preparing the bit maps by use of a screen  
3 display editor which is separate from the first self-service  
4 library terminal.

1           86. The method of claim 84 wherein step c) com-  
2 prises the step of preparing the bit maps by use of a screen  
3 display editor which is part of the first self-service  
4 library terminal.



1 87. The method of claim 84 wherein step e) com-  
2 prises the step of transferring the bit maps from the data  
3 storage memory to the video display memory in order to  
4 render fonts.

1 88. The method of claim 83 further comprising the  
2 step of reading a code on an article placed on an article  
3 receiving area of one of the self-service library terminals.

1 89. The method of claim 88 wherein the step of  
2 reading a code comprises the step of reading a code on a  
3 circulating item.

1 90. The method of claim 88 wherein the step of  
2 reading a code comprises the step of reading a code on an  
3 identification card.

1 91. The method of claim 88 wherein the step of  
2 reading a code comprises the step of reading an idle indica-  
3 tor on the article receiving area in order to determine  
4 whether an article is placed in the article receiving area.

1 92. The method of claim 83 further comprising the  
2 step of sensing proximity of the borrower.

1           93. The method of claim 83 further comprising the  
2 step of presenting the configuration data in screen displays  
3 to a user so as to lead the user through configuration of  
4 the self-service library terminal.

1           94. The method of claim 83 wherein the step of  
2 transferring the configuration data from the administration  
3 terminal to the data storage memories of the multiple self-  
4 service library terminals comprises the following steps:

5           transferring the configuration data from the  
6 administration terminal to a first self-service library  
7 terminal; and,

8           transferring the configuration data from the first  
9 self-service library terminal to a second self-service li-  
10 brary terminal.

1           95. The method of claim 83 wherein the adminis-  
2 tration terminal is one of the self-service library termi-  
3 nals.

1 96. The method of claim 83 wherein the step of  
2 transferring the configuration data from the administration  
3 terminal to the data storage memories of the multiple self-  
4 service library terminals comprises the following steps:

5 transferring the configuration data from a first  
6 self-service library terminal to a second self-service  
7 library terminal; and,

8 transferring the configuration data from the  
9 second self-service library terminal to a third self-service  
10 library terminal.

1 97. The method of claim 83 wherein the configura-  
2 tion data includes bit maps.

1 98. The method of claim 97 wherein the bit maps  
2 comprise first and second sets of bit maps representing  
3 screen displays in corresponding first and second different  
4 languages.

1 99. The method of claim 83 wherein the configura-  
2 tion data pertain to machine setup data.

1 100. The method of claim 83 wherein the configu-  
2 ration data pertain to language selection data.

1 101. The method of claim 83 wherein the configu-  
2 ration data pertain to bar code filters.

1 102. The method of claim 83 wherein the configu-  
2 ration data pertain to layout of receipts.

1 103. The method of claim 83 wherein the configu-  
2 ration data pertain to sends/selects.

1 104. The method of claim 83 wherein the configu-  
2 ration data pertain to upgrades.

1 105. The method of claim 83 wherein the configu-  
2 ration data pertain to diagnostics.

1 106. The method of claim 83 wherein the configu-  
2 ration data pertain to communication diagnostics.

1 107. The method of claim 83 wherein the configu-  
2 ration data pertain to a host interface.

1           108. The method of claim 83 further comprising  
2 the steps of projecting visible indicators onto article re-  
3 ceiving areas of the multiple self-service library terminals  
4 and changing the visible indicator between first and second  
5 visible states.

1           109. A library terminal comprising:  
2 a monitor;  
3 a data storage memory storing screen displays,  
4 wherein the screen displays include fonts; and,  
5 a controller, wherein the controller is arranged  
6 to control the display of the screen displays, including the  
7 fonts, on the monitor without performing font rendering from  
8 fonts stored separately from the screen displays.

1           110. The library terminal of claim 109 further  
2 comprising an article receiving area arranged to receive an  
3 article, and a code reader arranged to read a code on the  
4 article when placed on the article receiving area, wherein  
5 the controller is arranged to process a signal from the code  
6 reader corresponding to the code read by the code reader.

1           111. The library terminal of claim 110 wherein  
2 the article is a circulating item.

1           112. The library terminal of claim 110 wherein  
2 the article is an identification card.

1           113. The library terminal of claim 110 wherein  
2 the article receiving area has an idle indicator thereon  
3 readable by the code reader in order to determine whether an  
4 article is placed in the article receiving area.

1           114. The library terminal of claim 109 further  
2 comprising a proximity sensor arranged to sense proximity of  
3 a borrower.

1           115. The library terminal of claim 109 further  
2 comprising a connector, wherein the connector is arranged to  
3 couple the library terminal over a link to a circulation  
4 system, and wherein the controller is arranged to store loan  
5 transactions during periods when the link to the circulation  
6 system is down so that the loan transactions can be later  
7 transferred to the circulation system.

1 116. The library terminal of claim 109 wherein  
2 the controller is arranged to control a code reader so as to  
3 project a visible indicator onto an article receiving area  
4 and so as to change the visible indicator between first and  
5 second visible states.

1 117. A library terminal comprising:  
2 a housing;  
3 an item receiving area incorporated in the hous-  
4 ing, wherein the item receiving area is arranged to receive  
5 a circulating item;  
6 a video receiving area incorporated in the hous-  
7 ing, wherein the video receiver area is arranged to receive  
8 a video;  
9 a reader supported by the housing and arranged to  
10 read the circulating item and the video when the circulating  
11 item is placed in the item receiving area and when the video  
12 is placed in the video receiving area, and,  
13 a controller, wherein the controller is contained  
14 with the housing, and wherein the controller is coupled to  
15 the reader.

1 118. The library terminal of claim 117 wherein  
2 reader comprises:

3 a bar code reader supported by the housing and ar-  
4 ranged to read a bar code on the circulating item when the  
5 circulating item is placed in the item receiving area; and,

6 a video reader supported by the housing and ar-  
7 ranged to read the video when the video is placed in the  
8 video receiving area.

1 119. The library terminal of claim 117 wherein  
2 the video receiving area is within the housing, and wherein  
3 the housing has an opening so that a video may be inserted  
4 into the video receiving area.

1 120. The library terminal of claim 117 further  
2 comprising a magnetic stripe reader, wherein the magnetic  
3 stripe reader is contained with the housing, wherein the  
4 housing has an opening, wherein the opening is arranged to  
5 permit access to the magnetic stripe reader from outside of  
6 the housing, and wherein the controller is coupled to the  
7 magnetic stripe reader.



1 121. The library terminal of claim 117 further  
2 comprising a printer, wherein the printer is contained with  
3 the housing, wherein the housing has an opening, wherein the  
4 opening is arranged to permit access from outside of the  
5 housing, wherein the printer is arranged to print a document  
6 and to present the document through the opening to a bor-  
7 rower, and wherein the controller is coupled to the printer.

1 122. The library terminal of claim 117 further  
2 comprising a display, wherein the display is contained  
3 within the housing so that the display is viewable by a  
4 user, and wherein the controller is arranged to control the  
5 display in order to display screen displays to the user.

1 123. The library terminal of claim 117 further  
2 comprising a proximity sensor, wherein the proximity sensor  
3 is supported by the housing so that the proximity sensor is  
4 arranged to sense proximity of a user.

1 124. The library terminal of claim 117 wherein  
2 the item receiving area has an idle bar code thereon read-  
3 able by the reader in order to determine whether a circu-  
4 lating item is placed in the item receiving area.

1           125. The library terminal of claim 117 wherein  
2 the controller is arranged to process both loans and re-  
3 turns.

1           126. The library terminal of claim 117 further  
2 comprising a transducer, wherein the transducer is supported  
3 by the housing so that the transducer is arranged to provide  
4 an audible feedback of the operation of the library terminal  
5 by a user.

1           127. The library terminal of claim 117 further  
2 comprising a security marker reader, wherein the security  
3 marker reader is contained within the housing adjacent to  
4 the item receiving area, and wherein the security marker  
5 reader is arranged to read a security marker attached to the  
6 circulating item.

1           128. The library terminal of claim 117 further  
2 comprising a keypad, wherein the keypad is supported by the  
3 housing so that the keypad is arranged to interact with a  
4 user during returns and loans.

1           129. The library terminal of claim 117 further  
2 comprising a CD receiver, wherein the CD receiver is con-  
3 tained within the housing, and wherein the housing has an  
4 opening so that a CD may be inserted into the CD receiver  
5 and may be read during a loan transaction.

1           130. The library terminal of claim 117 further  
2 comprising a connector, wherein the connector is arranged to  
3 couple the library terminal over a link to a circulation  
4 system, and wherein the controller is arranged to store loan  
5 transactions during periods when the link to the circulation  
6 system is down so that the loan transactions can be later  
7 transferred to the circulation system.

1           131. The library terminal of claim 117 wherein  
2 the controller is arranged to control the code reader so as  
3 to project a visible indicator onto at least one of the item  
4 receiving area and the video receiving area and so as to  
5 change the visible indicator between first and second visi-  
6 ble states.

132. A self-service library terminal comprising:  
a reader arranged to read identifications on arti-  
cles involved in library loan transactions; and,  
a controller, wherein the controller is arranged  
to process signals from the reader corresponding to the  
identifications read by the reader, and wherein the control-  
ler is arranged to process financial credit transactions  
related to the library loan transactions and to remind a  
borrower of the borrower's account status.

133. The self-service library terminal of claim  
132 further comprising a display, wherein the controller is  
arranged to control the display in order to remind the  
borrower that a loan is a chargeable loan.

134. The self-service library terminal of claim  
133 wherein the controller is arranged to control the dis-  
play in order to request that the borrower pay a fee for the  
chargeable loan.

135. The self-service library terminal of claim  
133 wherein the controller is arranged to control the dis-  
play in order to request that the borrower pay a fee for the  
chargeable loan upon return of the article.

1 136. The self-service library terminal of claim  
2 133 wherein the display is a monitor.

1 137. The self-service library terminal of claim  
2 133 wherein the display is a printer.

1 138. The self-service library terminal of claim  
2 132 further comprising a display, wherein the controller is  
3 arranged to control the display in order to remind the  
4 borrower of an overdue article chargeable to the borrower.

1 139. The self-service library terminal of claim  
2 138 wherein the controller is arranged to control the dis-  
3 play in order to remind the borrower to pay immediately for  
4 the overdue article.

1 140. The self-service library terminal of claim  
2 138 wherein the controller is arranged to allow the borrower  
3 to continue a present loan transaction even though the  
4 borrower has not paid for overdue article.

1 141. The self-service library terminal of claim  
2 138 wherein the controller is arranged to give the borrower  
3 the option of continuing a present loan transaction even  
4 though the borrower has not paid for an overdue article or  
5 of paying immediately for the overdue article.

1 142. The self-service library terminal of claim  
2 132 further comprising a display, wherein the controller is  
3 arranged to control the display in order to remind the  
4 borrower of a hold reserved for the borrower.

1 143. The self-service library terminal of claim  
2 132 further comprising a display, wherein the controller is  
3 arranged to control the display in order to remind the  
4 borrower of a fine owed by the borrower.

1 144. The self-service library terminal of claim  
2 132 further comprising a collection device, wherein the  
3 controller is arranged to interact with the collection  
4 device in order to collect a fine or a fee from the borrow-  
5 er.

1 145. The self-service library terminal of claim  
2 144 wherein the collection device is a credit card reader.

1                   146. The self-service library terminal of claim  
2                   144 wherein the collection device is a debit card reader.

1                   147. The self-service library terminal of claim  
2                   144 wherein the collection device is a smart card reader.

1                   148. The self-service library terminal of claim  
2                   144 wherein the collection device is a cash receiver.

1                   149. The self-service library terminal of claim  
2                   132 further comprising a connector, wherein the connector is  
3                   arranged to couple the self-service library terminal over a  
4                   link to a circulation system, and wherein the controller is  
5                   arranged to store loan transactions during periods when the  
6                   link to the circulation system is down so that the loan  
7                   transactions can be later transferred to the circulation  
8                   system.

1                   150. The self-service library terminal of claim  
2                   132 further comprising a display, wherein the controller is  
3                   arranged to control the display in order to remind the  
4                   borrower of a new charge.

1 151. The self-service library terminal of claim  
2 150 wherein the controller is arranged to control the dis-  
3 play in order to remind the borrower that the borrower can  
4 accept or reject the new charge.

1 152. The self-service library terminal of claim  
2 132 further comprising an article receiving area, wherein  
3 the controller is arranged to control the reader so as to  
4 project a visible indicator onto the article receiving area  
5 and so as to change the visible indicator between first and  
6 second visible states.

1 153. An arrangement comprising a self-service  
2 library terminal, a circulation system, and a communication  
3 link, wherein the communication link couples the self-ser-  
4 vice library terminal to the circulation system, wherein the  
5 self-service library terminal has a controller arranged to  
6 process a loan transaction of a borrower of a circulating  
7 item, wherein the controller stores the loan transaction  
8 during a period when the communication link between the  
9 self-service library terminal and the circulation system is  
10 down, and wherein the controller transfers the stored loan  
11 transaction from the self-service library terminal to the  
12 circulation system during a period when the communication



13 link between the self-service library terminal and the  
14 circulation system is not down.

1 154. The arrangement of claim 153 wherein the  
2 self-service library terminal comprises an article receiving  
3 area and a scanner, wherein the controller is arranged to  
4 control the scanner so as to project a visible indicator  
5 onto the article receiving area and so as to change the  
6 visible indicator between first and second visible states.

1 155. A library terminal comprising:  
2 a card receiving area arranged to receive a li-  
3 brary card;  
4 a card reader arranged to read the library card  
5 when the library card is placed on the card receiving area;  
6 and,  
7 a controller coupled to the card reader, wherein  
8 the controller is responsive to the card reader in order to  
9 determine incorrect library card placement on the card re-  
10 ceiving area.

1 156. The library terminal of claim 155 wherein  
2 the card receiving area has an idle indicator, and wherein  
3 the controller determines that the library card is incor-  
4 rectly placed on the card receiving area when the card  
5 reader fails to read the library card and the idle indica-  
6 tor.

1 157. The library terminal of claim 155 wherein  
2 the controller determines incorrect library card placement  
3 when the card reader reads an article other than the library  
4 card before the card reader reads the library card.

1 158. The library terminal of claim 155 wherein  
2 the controller is arranged to control the card reader so as  
3 to project a visible indicator onto the card receiving area  
4 and so as to change the visible indicator between first and  
5 second visible states.

1 159. A library terminal comprising:  
2 a circulating item receiving area arranged to  
3 receive a circulating item;  
4 a scanner arranged to scan the circulating item  
5 when the circulating item is placed on the circulating item  
6 receiving area; and,

7 a controller coupled to the scanner, wherein the  
8 controller is responsive to the scanner in order to deter-  
9 mine when the circulating item is in the circulating item  
10 receiving area but is not in a reference position.

1 160. The library terminal of claim 159 further  
2 comprising an indicator, wherein the controller controls the  
3 indicator to provide feedback that the circulating item is  
4 not in the reference position.

1 161. The library terminal of claim 159 further  
2 comprising a security marker reader arranged to read a  
3 security marker attached to the circulating item, and where-  
4 in the controller is arranged to control a sensing range of  
5 the security marker reader when the circulating item is in  
6 the circulating item receiving area but is not in a refer-  
7 ence position.

1 162. The library terminal of claim 159 further  
2 comprising an item proximity sensor, and wherein the con-  
3 troller is responsive to the scanner and the item proximity  
4 sensor in order to determine when the circulating item is in  
5 the circulating item receiving area but is not in the refer-  
6 ence position.

1 163. The library terminal of claim 162 further  
2 comprising a back wall of the circulating item receiving  
3 area, wherein the item proximity sensor is positioned to  
4 detect when the circulating item is not against the back  
5 wall, and wherein the reference position is against the back  
6 wall.

1 164. The library terminal of claim 159 further  
2 comprising first and second item proximity sensors, and  
3 wherein the controller is responsive to the scanner and the  
4 first and second item proximity sensors in order to deter-  
5 mine when the circulating item is in the circulating item  
6 receiving area but is not in the reference position.

1 165. The library terminal of claim 164 further  
2 comprising a back wall of the circulating item receiving  
3 area, wherein the first and second item proximity sensors  
4 are positioned to detect when the circulating item is not  
5 against the back wall, and wherein the reference position is  
6 against the back wall.

1           166. The library terminal of claim 164 further  
2 comprising a back wall of the circulating item receiving  
3 area, and wherein the first and second item proximity sen-  
4 sors are positioned to detect when the circulating item is  
5 skewed with respect to the back wall.

1           167. The library terminal of claim 159 wherein  
2 the controller is arranged to control the scanner so as to  
3 project a visible indicator onto the circulating item re-  
4 ceiving area and so as to change the visible indicator  
5 between first and second visible states.

1           168. A library terminal comprising:  
2           a first circulating item receiving area arranged  
3 to receive a first circulating item of a first type;  
4           a first scanner arranged to read the first circu-  
5 lating item when the first circulating item is placed in the  
6 first circulating item receiving area;  
7           a second circulating item receiving area arranged  
8 to receive a second circulating item of a second type,  
9 wherein the first and second types are different;  
10          a second scanner arranged to read the second  
11 circulating item when the second circulating item is placed  
12 in the second circulating item receiving area; and,

13 a controller coupled to the first and second  
14 scanners, wherein the controller is responsive to the first  
15 scanner in order to determine when the second circulating  
16 item is placed on the first circulating item receiving area.

1 169. The library terminal of claim 168 wherein  
2 the first scanner is a bar code scanner.

1 170. The library terminal of claim 168 wherein  
2 the first scanner is a dimension scanner.

1 171. The library terminal of claim 168 wherein  
2 the first circulating item is a book and the second circu-  
3 lating item is a video.

1 172. The library terminal of claim 168 wherein  
2 the first circulating item is a book and the second circu-  
3 lating item is a CD.

1 173. The library terminal of claim 168 further  
2 comprising a security marker state setter arranged to set a  
3 state of a security marker attached to a circulating item,  
4 and wherein the controller is arranged to inhibit the secu-  
5 rity marker state setter when the controller determines that  
6 the second circulating item is placed on the first circulat-  
7 ing item receiving area.

1 174. The library terminal of claim 173 wherein  
2 the state is a desensitized state.

1 175. The library terminal of claim 173 wherein  
the state is a sensitized state.

1 176. The library terminal of claim 168 wherein  
2 the controller is arranged to control one of the first and  
3 second scanners so as to project a visible indicator onto a  
4 corresponding one of the first and second circulating item  
5 receiving areas and so as to change the visible indicator  
6 between first and second visible states.

1 177. A self-service library terminal comprising a  
2 controller and a display, wherein the controller is arranged  
3 to detect an error state of the self-service library termi-  
4 nal and, while the self-service library terminal is in the  
5 error state, to notify a user through use of the display  
6 that the user may continue a transaction at the option of  
7 the user.

1 178. The self-service library terminal of claim  
2 177 wherein the controller is arranged to detect first and  
3 second error states, wherein the controller is arranged to  
4 notify a user that the user may elect to continue a transac-  
5 tion upon detection of the first error state, and wherein  
6 the controller is arranged to block the transaction upon  
7 detection of the second error state.

1 179. The self-service library terminal of claim  
2 177 further comprising a printer, and wherein the error  
3 state is the printer being out of paper.

1 180. The self-service library terminal of claim  
2 177 further comprising a printer, and wherein the error  
3 state is the printer being out of service.



1           181. The self-service library terminal of claim  
2           177 wherein the error state is a failure of a communication  
3           link.

1           182. The self-service library terminal of claim  
2           177 further comprising an article receiving area and a  
3           scanner, wherein the controller is arranged to control the  
4           scanner so as to project a visible indicator onto the arti-  
5           cle receiving area and so as to change the visible indicator  
6           between first and second visible states.

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